REMARKS

By the above actions, claims 16-17, 25-27 and 30 and the Specification have been amended to correct the noted and discovered informalities, and claims 1-15 have been cancelled. No new matter is introduced. In view of these actions and the following remarks, reconsideration of this application is requested.

In response to the objections to the drawings, the specification has been amended to correct the noted informalities and others, and so that the specification matches the actual drawings. No new matter is introduced. Accordingly, these objections have been overcome. If, however, the Examiner disagrees, the Examiner is invited to contact the undersigned attorney, who will be happy to work with the Examiner in a joint effort to derive mutually satisfactory solution.

In response to the 35 U.S.C. § 112 rejection of claim 25, claim 25 has been amended to correct the noted informality. No new matter is introduced. Accordingly, the pending claims are in compliance with 35 U.S.C. § 112 and no further rejection on such a basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to contact the undersigned attorney, who will be happy to work with the Examiner in a joint effort to derive mutually satisfactory claim language.

The rejection of claims 16-30 based upon the combination of Kostadinov (United States Patent No. 7,032,045), and Allmond et al. (United States Patent No. 5,754,552) is inappropriate as it relates to the pending claims, because Kostadinov, and Allmond et al., alone or in combination, fail to teach or suggest all of the features recited in the pending claims. For example, independent claim 16 recites (emphasis added):

> A field bus adapter for **transmitting and receiving control data from a field bus network where data is being exchanged according to a specific field bus protocol**, said adapter comprising:
> a transmitter for transmitting data to the field bus network and
> a receiver for receiving data from the field bus network, and
> a protocol detector adapted for **detecting a field bus protocol between a number of predefined field bus protocols** and for setting up the receiver and the transmitter for

communicating according to said detected field bus protocol,
wherein said protocol detector comprises:
means for receiving data from the field bus,
means for **determining if the received data complies with predefined characteristics** stored in a database, said characteristics **uniquely identifying data of only one of said number of predefined field bus protocols**, and
means for setting up the receiver and the transmitter for communicating according to said one protocol, if said received data complies with said characteristics.

Independent claim 26 recites (emphasis added):

A method of **transmitting and receiving control data from a field bus network where data is being exchanged according to a specific field bus protocol** using adapter comprising a transmitter for transmitting data to the field bus network and a receiver for receiving data from the field bus network, a protocol detector adapted for **detecting a field bus protocol between a number of predefined field bus protocols** and for setting up the receiver and the transmitter for communicating according to said detected field bus protocol, said method comprising the steps of:
receiving data from the field bus,
determining if the received data complies with predefined characteristics stored in a database, said characteristics **uniquely identifying data of only one of said number of predefined field bus protocols**, and
setting up the receiver and transmitter for communicating according to said one protocol, if said received data complies with said characteristics.

Independent claim 30 recites (emphasis added):

A storage medium having stored thereon instructions for performing the method of **transmitting and receiving control data from a field bus network where data is being exchanged according to a specific field bus protocol** using an adapter comprising a transmitter for transmitting data to the field bus network and a receiver for receiving data from the field bus network, a protocol detector adapted for **detecting a field bus protocol between a number of predefined field bus protocols** and for setting up the receiver and the transmitter for communicating according to said detected field bus protocol,

said method comprising the steps of:
> receiving data from the field bus,
> **determining if the received data complies with predefined characteristics** stored in a database, said characteristics **uniquely identifying data of only one of said number of predefined field bus protocols**, and
> > setting up the receiver and transmitter for communicating according to said one protocol, if said received data complies with said characteristics

Thus, the inventions of independent claims 16, 26 and 30 are directed to the novel features of transmitting and receiving control data from a field bus network where data is being exchanged according to a specific field bus protocol, detecting a field bus protocol between a number of predefined field bus protocols, and determining if received data complies with predefined characteristics uniquely identifying data of only one of the number of predefined field bus protocols.

By contrast, Kostadinov is directed to a multi-protocol bus device for communications with protocols of traditional bus systems. This differs from the inventions of independent claims 16, 26 and 30 where the communication protocol is designed specifically for field bus systems. The system of Kostadinov uses a central processor for detecting the bus structure. As a central processor is used in the system of Kostadinov, this processor will operate rather slowly. In a field bus system of the inventions of independent claims 16, 26 and 30, however, a very rapid answer is necessary; otherwise the communication would be lost. Accordingly, the system of Kostadinov using a central processor, which communicates with a memory, a user interface, controllers, drivers for other devices and input for sensors, will operate very slowly, as compared to the inventions of independent claims 16, 26 and 30.

If the inventions of independent claims 16, 26 and 30 were to be used in the system of Kostadinov, the adapter of the inventions of independent claims 16, 26 and 30 would be included as part of the communication interface 201 in Figure 2 of Kostadinov. Only by placing the claimed adapter that close to the bus and letting the claimed adapter operate with its own fast operating logic, which could in fact include a microprocessor, is it possible to select between different field bus protocols of a field bus.

Accordingly, it is not clear how Kostadinov discloses the adapter of the inventions of independent claims 16, 26 and 30, as a whole computer system is disclosed by Kostadinov, and column 5, lines 1-20 of Kostadinov generally describe a communication protocol, but do not disclose, teach or suggest use of a field bus. It is correct that the computer system of Kostadinov includes a communication interface with a transmitter and a receiver, but it is important to realize that using a whole computer system for determining between different protocols is a completely different technique than that of the field bus adapter of the inventions of independent claims 16, 26 and 30.

The present office action asserts that column 7, lines 36-55 of Kostadinov discloses that the processor 210 may select the communication protocol (e.g., from a number of communication protocols stored in a device memory) to encode signals sent on the system bus 110 or to decode signals received from the system bus 110. However, the computer system of Kostadinov merely is being used for protocol **identification**, rather than the adapter of the inventions of independent claims 16, 26 and 30 performing field bus protocol **selection**.

Kostadinov, column 6, lines 2-4, describes FOUNDATION™ Fieldbus, Profibus™, FoxCom™, or HART™ devices, which are well-known protocols and devices widely used, not only in field bus communications. From column 8, lines 6-56 of Kostadinov it is clear that the computer system of Kostadinov has to analyze a whole data segment and maybe even send a token response back to the sender before the identification of the protocol can be made. This is different from the technology used in the inventions of independent claims 16, 26 and 30 where the bus adapter need only analyze very few of the first bits of a message before a selection of the protocol is performed. In the field bus, communication is performed so fast that there is no time for listening to a whole data segment and communicating down into a large memory and sending a token back to the sender before the selection is performed, as would be required by Kostadinov. The selection has to be performed immediately; otherwise the data segment which is present at the field bus will be lost.

With respect to page 5 of the office action, it is not correct that claims 17 and 27 are disclosed by Kostadinov, because in Kostadinov, contrary to assertion in the office action, there is no explicit disclosure directed towards detecting between two predefined field bus protocols. The only relevant disclosure found in Kostadinov is that protocols which are

designed for field bus can also be used in all other kinds of data bus communication. The arguments concerning the mention of FOUNDATION™ Field bus protocol and Profibus™ protocol in Kostadinov merely are field bus protocols that are commonly available and can be used in all computer based data busses for traditional computer communication. However, such a general disclosure fails to disclose, teach or suggest detecting between two predefined field bus protocols, as required by claims 17 and 27.

With respect to claim 23, only a description of the FOUNDATION™ Fieldbus protocol is disclosed in Kostadinov. However, this does not correspond to the field bus adapter for detecting the noted field bus protocols, because in Kostadinov a token is returned to the sender, thereby making for a very slow response.

With respect to claims 24 and 25, the office action asserts that column 4, lines 7-16 and column 5, lines 21-25 of Kostadinov concern technology relevant to the noted claim. However, contrary to such assertion, this is not the case, as cited portions of Kostadinov simply describe data communication to and from an actuator by means of a processor by sending information over a databus, and which fails to disclose, teach or suggest a field bus adapter, wherein control data to be transmitted is a value representing a measured physical value. If the invention of claim 24 were to be used in the system of Kostadinov, the actuator would have its own adapter and each of the sensors would have one adapter each. All of such adapters then could be connected to the same field bus, and communication could be performed over long distances from a control system. In Kostadinov, on the other hand, the control system is placed in the actuator for communicating with the sensors. This is possible in, for example, production facilities, which is the way Kostadinov is to be used. If a field bus is used in the system of Kostadinov, it would probably be used for operating sensors or actuators in a harsh environment, where the computer system has to be placed far from the actual actuators or sensors.

Accordingly, the general disclosures in Kostadinov of protocol detection fails to disclose, teach or suggest the noted features and advantages of the inventions of independent claims 16, 26 and 30 and the claims dependent therefrom.
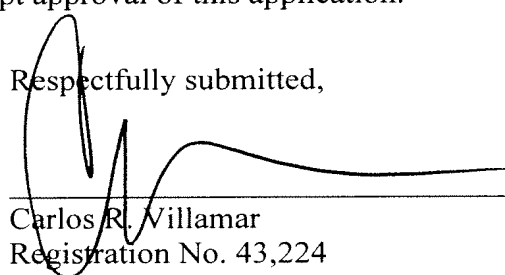
Allmond et al. is directed to an automatic communication protocol detection system and method for network systems and fails to cure the noted deficiencies in Kostadinov. Specifically, with respect to claim 29, Allmond et al. is silent with respect to a field bus

adapter, and much less with respect to detecting a field bus protocol periodically in predefined intervals, as required by claim 29. Allmond et al. merely concerns a traditional computer communication system where communication takes place over traditional computer networks, and although column 16, lines 41-54 of Allmond et al. discloses a method where a processor selects between different protocols, such selection has nothing at all to do with field bus communication, as required by claim 29. Accordingly, Allmond et al. fails to disclose, teach or suggest the noted features and advantages of the inventions of independent claims 16, 26 and 30 and claims dependent therefrom.

Thus, independent claims 16, 26 and 30 are patentably distinguishable over Kostadinov, and Allmond et al., alone or in combination. The dependent claims are allowable on their own merits and for at least the reasons advanced above with respect to independent claims 16, 26 and 30.

Therefore, in the absence of new and more relevant prior art being discovered, this application should now be in condition for allowance and action to that effect is requested. However, while it is believed that this application should now be in condition for allowance, in the event that any issues should remain, or any new issues arise, after consideration of this response which could be addressed through discussions with the undersigned, then the Examiner is requested to contact the undersigned by telephone for the purpose of resolving any such issue and thereby facilitating prompt approval of this application.

Respectfully submitted,

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